



Thank you for giving UL the opportunity to partner with you.

Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at <https://www.ul.com/about/locations>.

Please find attached the related material on Project

For your convenience, the below describes the related updates:

E158873-A6245-DescriptionUL
Figure-18-Total

This material is provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Times change, Trust Remains™

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK CAMERA
Model:	PNO-A7082R
Rating:	12 Vdc, 1.06 A or PoE (53 Vdc), 0.28 A
Applicant Name and Address:	HANWHA VISION CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: SoHyun Lee / Project Handler

Reviewed By: SeulKi Park / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

NETWORK CAMERA is designed for outdoor or indoor use, wall or ceiling use with mounting brackets.

It is a commercial equipment supplied from DC or UL listed PoE (Power over Ethernet) input and installed by service personnel.

Model Differences

N/A

Test Item Particulars

Product group	end product
Classification of use by	Instructed person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	Not directly connected to the mains
Considered current rating of protective device	N/A
Equipment mobility	wall/ceiling-mounted
Over voltage category (OVC)	OVC I
Class of equipment	Class III
Special installation location	Outdoor location
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	55 Outdoor: minimum - 50
IP protection class	IP 66 and IP 67
Power systems	not AC mains
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	2.1

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C
- The product is intended for use on the following power systems : No direct connection

- Considered current rating of protective device as part of the building installation (A) : N/A
- Mains supply tolerance (%) or absolute mains supply : No direct connection
- The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The product was investigated to the following additional standard : IEC 62471:2006, IEC 60529:1989+A1:1999+A2:2013
- The outdoor equipment/enclosure was evaluated for use in an ambient range of : - 50 °C to 55 °C

Additional Information

4791690483

- Maximum Normal Load: Continuous operation. (Operate the camera through networked equipment with IR LED ON + HEATER ON)

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's Company's name, Trade Name, File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	Input Ratings (voltage, current)
Outdoor enclosure type	"Rainproof", IP66 and IP67
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from our website, before connecting to the supply. C. Company website URL (https://www.~~) or QR code.
(Website) Manual - 1	This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from 12Vdc, 1.06A or PoE(53V), 0.28A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3at shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.
SCC requirement	If the signal words DANGER, WARNING, and CAUTION are included, a French manual is provided.

Special Instructions to UL Representative

N/A

--

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All models					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All models					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	All models					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	N/A	N/A	N/A	N/A	N/A

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Enclosure - Lens cover (Plastic)	TEIJIN POLYCARBONATE CHINA LTD	L-1250U(#)(f1)	Min. 1.5 mm thickness, rated Min. HB, 115 deg. C	QMFZ2	UL (E245526)	
Enclosure - LED cover black part 1 (Plastic)	LOTTE CHEMICAL CORPORATION	UH-1068(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	
Enclosure - LED cover black part 2 (Plastic)	SABIC INNOVATIVE PLASTICS B V	EXL1434T(f1)(GG)(N1)(BK47)	Min. 1.5 mm thickness, rated Min. HB, 120 deg. C	QMFZ2	UL (E45329)	
Enclosure - Top ring (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 0.9 mm thickness, See enclosure for dimension.	-	-	
Enclosure - middle (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	-	
Enclosure - neck (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness, See enclosure for dimension.	-	-	
Enclosure - Bottom near USB (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 3.0 mm thickness, See enclosure for dimension.	-	-	
Enclosure - Bottom near mainboard (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness, See enclosure for dimension.	-	-	
Internal Plastic Part Materials	LOTTE CHEMICAL CORPORATION	HN-1068(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	

Internal Plastic Part Materials - Alternate	Interchangeable	Interchangeable	Min. 1.5 mm thickness, rated Min. HB	QMFZ2	UL	
Fuse (F1)	LITTELFUSE INC	449*	125 V, 2.5 A	JDYX2	UL (E10480)	
Line-Filter (L5)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PCM1206-752S	7.5 mH, 130 deg. C, See enclosure for more detail.	-	-	
Opto-coupler (LS1)	LITE-ON TECHNOLOGY CORP	LTV-217 (Type: LTV-217-C-G)	Isolation Voltage: 3750. Max. Operation Temperature: 110 deg. C	FPQU2	UL (E113898)	
Opto-coupler (LS1) - Alternate	COSMO ELECTRONICS CORP	KPC357NT	Isolation Voltage: 3750. Max. Operation Temperature: 115 deg. C	FPQU2	UL (E169586)	
Transformer (T1)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PDT25125SR	130 deg. C, See enclosure for more detail.	-	-	
IR LED (LD1, LD2, LD3, LD4) (total 4 ea)	OSRAM	SFH4714A	Vf = 2.3 Vdc (max), If = 1 000 mA Max	-	-	
IR LED (LD5, LD6, LD7, LD8) (total 4 ea)	OSRAM	SFH4718A	Vf = 2.3 Vdc (max), If = 1 000 mA Max	-	-	
Heater resistor (R2 to R5, R7, R8, R10 to R23) (Total 20 EA)	Interchangeable	Interchangeable	Each 5.6 ohm (20 EA, 1.28 W Total)	-	-	
Lens module for PNO-A7082R	DONGGUAN YUTONG OPTICAL TECHNOLOGY CO LTD	YTW30033A01DB.I R-PIRIS-JZ-4MP+H128+IR1021	Rated 4.2 - 5.0 Vdc	-	-	

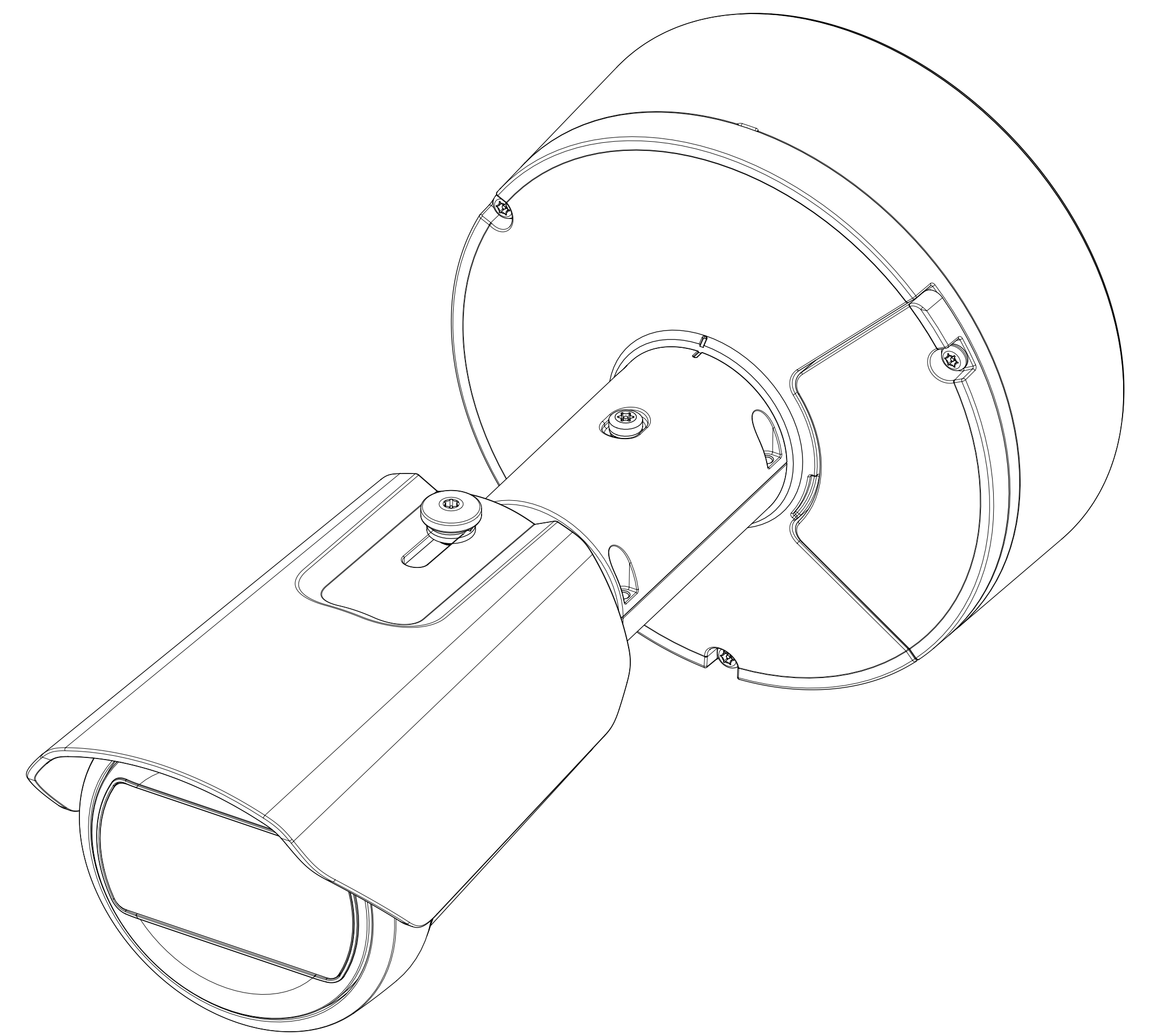
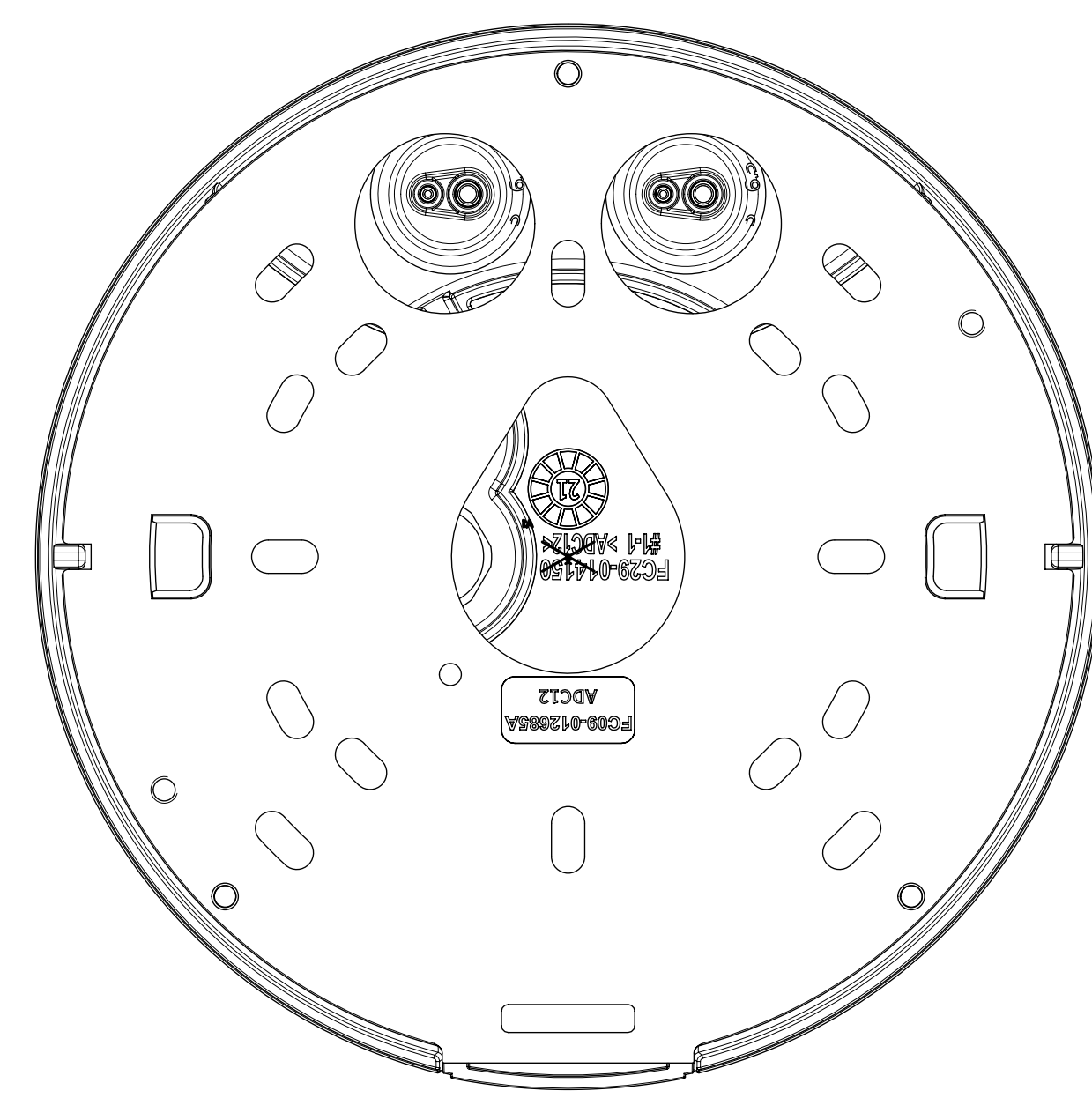
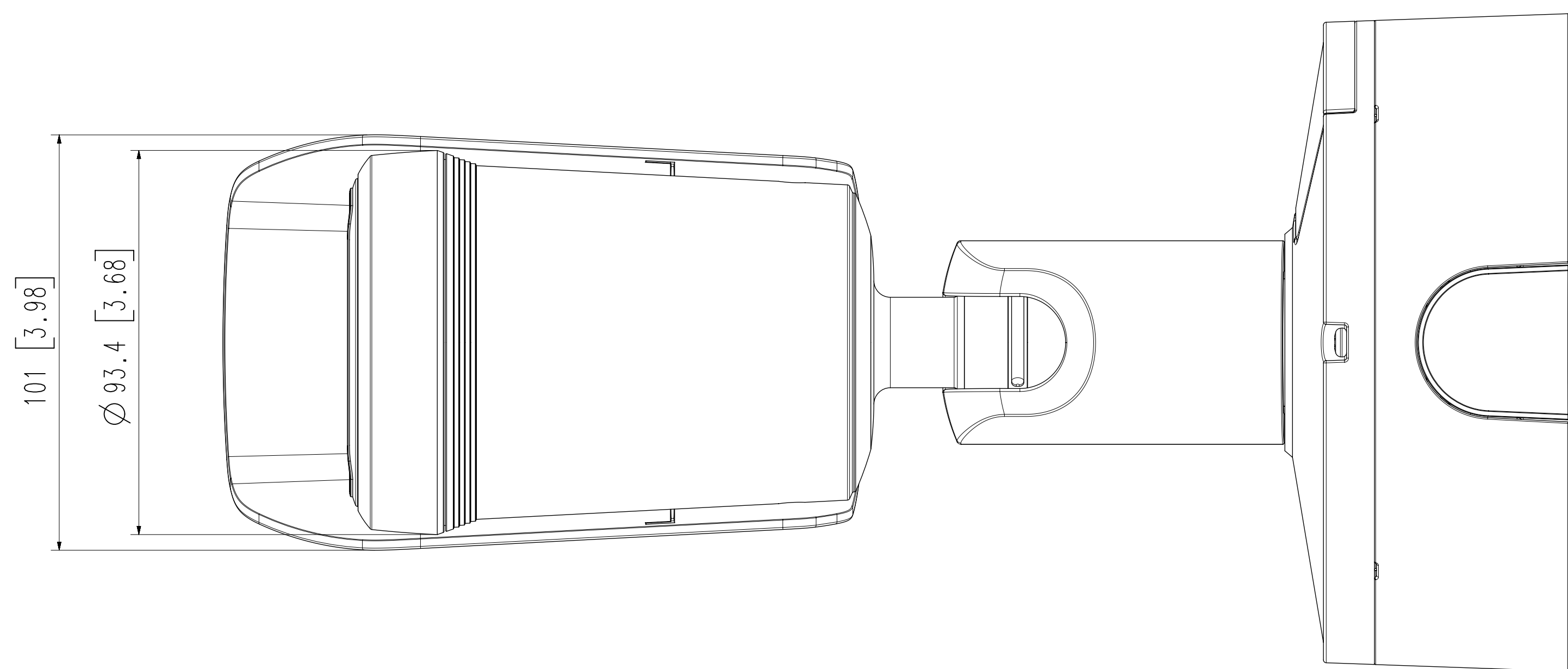
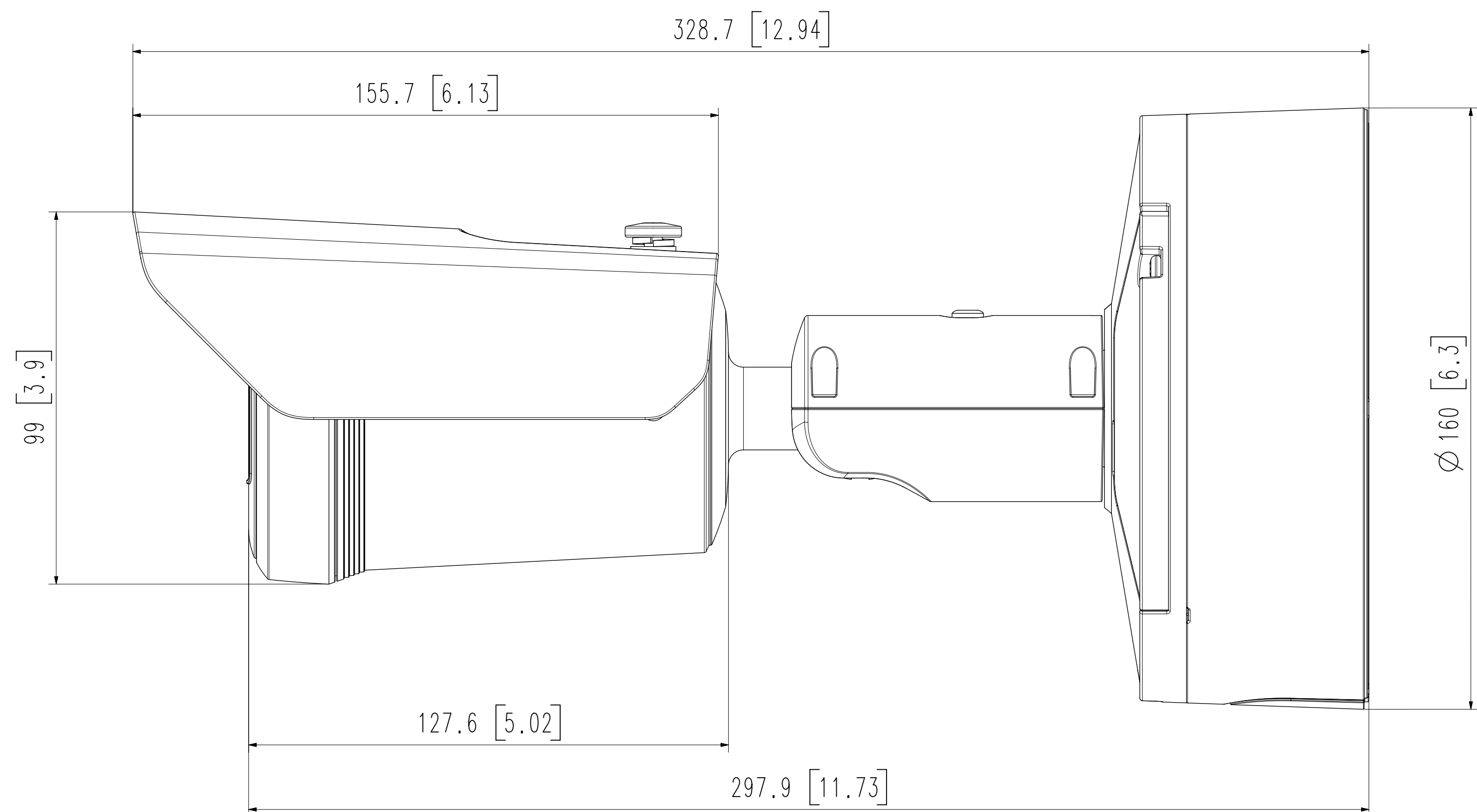
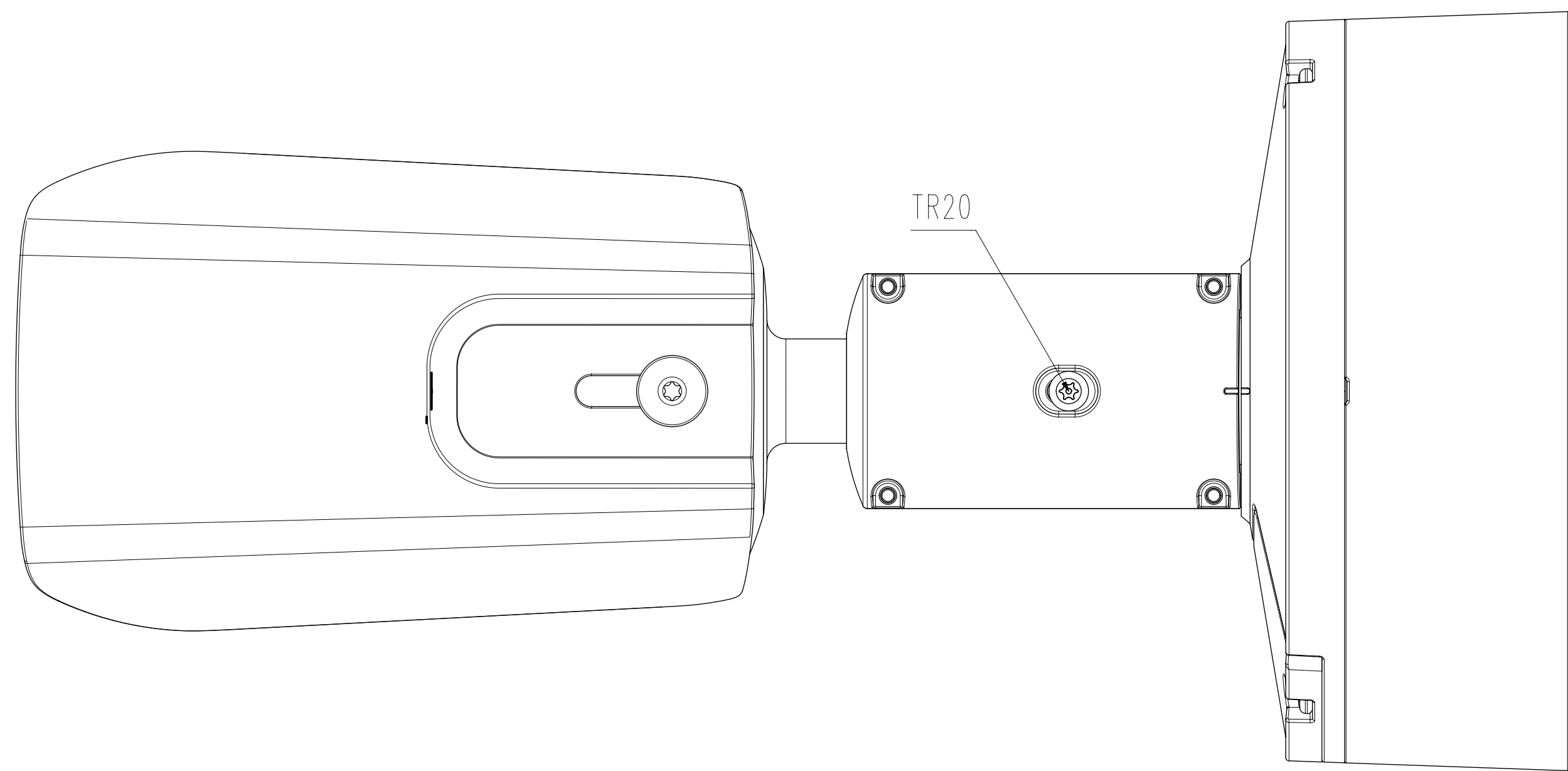
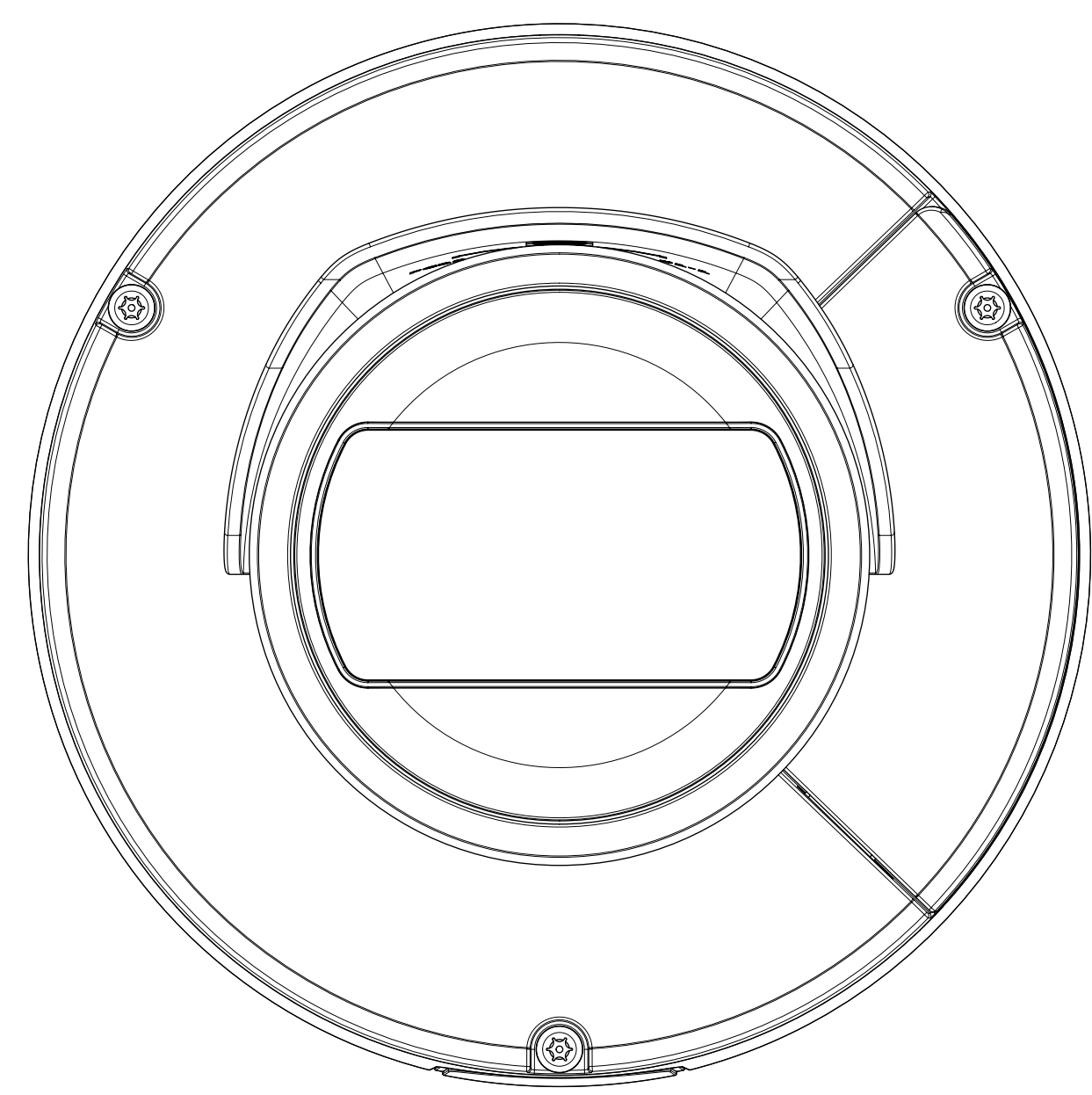
Rechargeable battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	MS421R	Lithium, Rechargeable, Max Charging Voltage: 3.1 Vdc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection Circuit (BAT1)	Interchangeable	Interchangeable	Diode (D2, 80 V, 250 mA) and Resistor (R194, 3.3 Kohm) in series	-	-	
Thermal pad	KOMOTECH	KGP-1(a)	Min. 2.0 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Heatsink	Interchangeable	Interchangeable	Aluminum (Black) Approx. overall size of $\phi 82$ mm, Min. 2.0 mm thickness, See enclosure for more dimension.	-	-	
Gasket - Between Top metal enclosure	NAMYANG VINA	O-VMQ-60-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Between bottom USB cover enclosure	NAMYANG VINA	O-VMQ-50-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Between middle cover metal and bottom metal enclosure	NAMYANG VINA	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Cable hole	NAMYANG VINA	C-VMQ-60-GR	Gasket Test was conducted under E158873-A6034	-	-	
PWB	HANNSTAR BOARD CORP	MV-4	Min. V-0, 130 deg. C	ZPMV2	UL (E89382)	
PWB - Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg. C	ZPMV2	UL	
Outdoor Label	Interchangeable	Interchangeable	Suitable for use on each type of surface to which applied, rated for maximum and	PGDQ2 or PGJI2	UL	

			minimum surface temperature specified, or Min. -50 deg. C to Max. 55 deg. C if not specified.			
--	--	--	---	--	--	--

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View - 1
Photographs	03-02	External View - 2
Photographs	03-05	Mainboard - 1
Photographs	03-06	Mainboard - 2
Photographs	03-07	IR LED board - 1
Photographs	03-08	IR LED board - 2
Photographs	03-09	Lens board - 1
Photographs	03-10	Lens board - 2
Photographs	03-11	USB board - 1
Photographs	03-12	USB board - 2
Photographs	03-13	Lens view - 1
Photographs	03-14	Lens view - 2
Diagrams	04-01	Enclosure drawings
Diagrams	04-02	Heatsink drawings
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T1) Specification
Miscellaneous	07-03	Linefilter(L5) Specification
Miscellaneous	07-04	Label

The following Page(s) are related to Diagrams-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

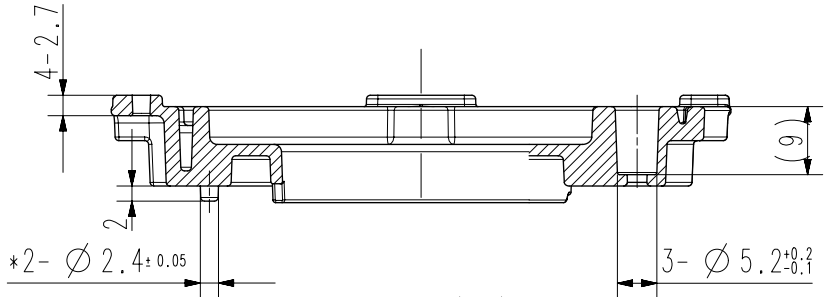


3	MODEL 2	
2	MODEL 1	
1	PN0-A7082R, A9082R	'25.03.06
No.	MODEL NAME	DATE
Unit:mm[inch]		SCALE:1/1
Hanwha Vision		

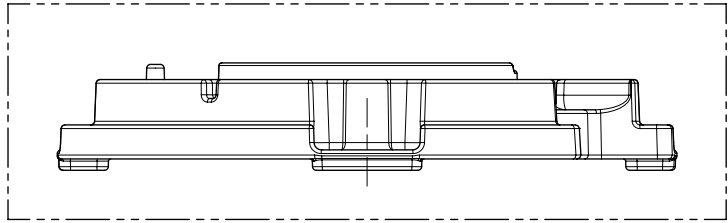
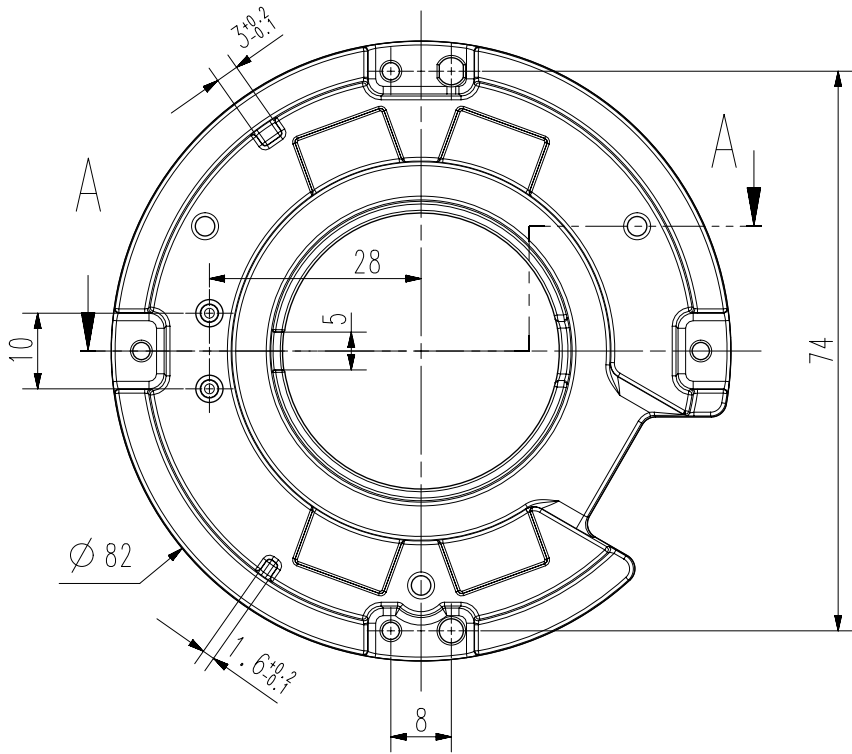
The following Page(s) are related to Diagrams-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

This parts should not contain any substances which are specified in AH60-0033K

NO	PART NAME	CODE NO.	MATERIAL	Q'TY	REMARK
1	HEAT-SINK LED	EP07-002100A	ADC12	1	-



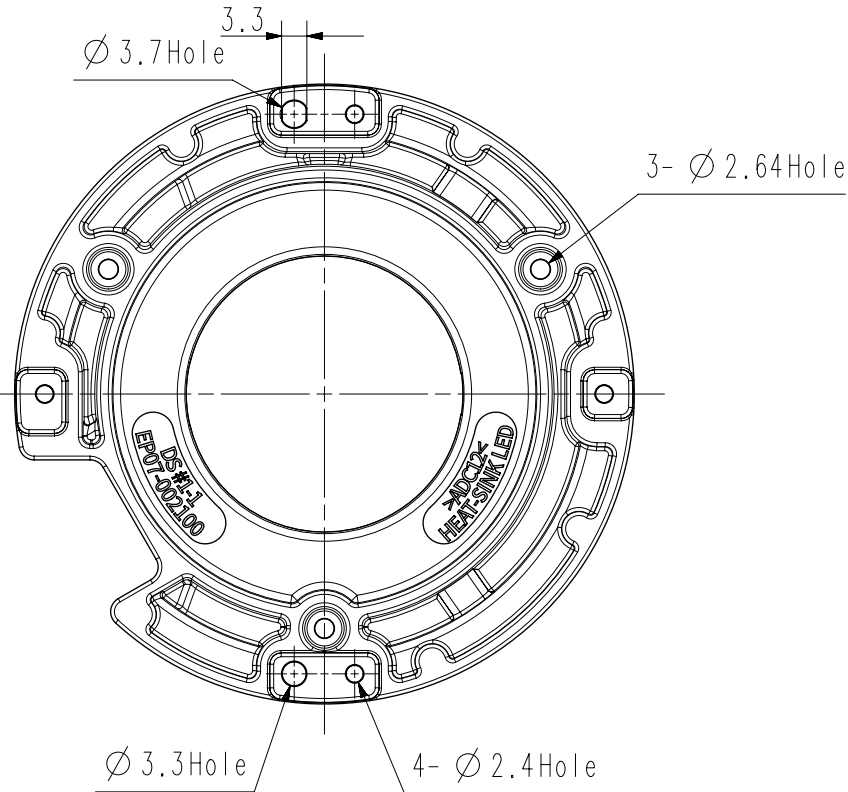
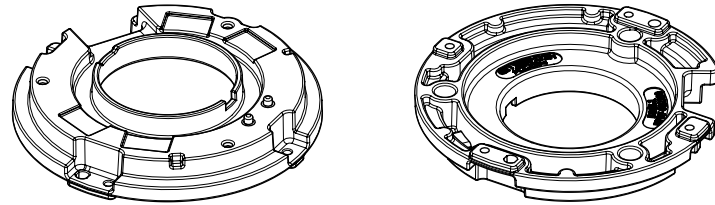
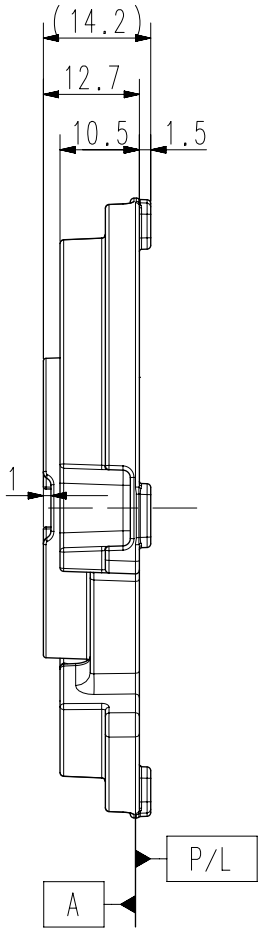
SECTION A-A



Anodizing Surface

STANDARD TOLERANCE

DIV	Lvl 1	Lvl 2	Lvl 3	Lvl 4	Lvl 5
0-16	±0.05	±0.1	±0.1	±0.2	±0.3
16-63	±0.05	±0.1	±0.2	±0.3	±0.4
63-250	±0.1	±0.2	±0.3	±0.4	±0.4
250-1000	±0.2	±0.3	±0.4	±0.5	±0.6



NOTE:Die-Casting

1. Material and Basic wall thickness : ADC, t2.0
2. Gate, P/L, Ejector Pin location must be handled with HVC designer.
3. Ejector pin stain must be less than 0.3 depth (凹), no flash is allowed.
4. Undescribed edge round must be less than R0.5, undescribed corners must be less than R0.3.
5. No Deformation, Air bubble, Shrinkage is allowed.
6. Every Flash on P/L must be less than 0.1.
7. Undescribed draft angles must be less than 0.5°.
8. * marks (Key dimensions) must be carefully handled.
9. Surface cutting level of Gate and Over-Flow must be equivalent with other surface cutting level.
10. Part Name, Code Number, Mold Number, Material, Model Name must be carved on the inner side of the part.
 - Location and Specs. must be handled with HVC designer.
11. External look and printing specification must follow separately distributed Design Specification data.
 - Including Surface cutting, Chromate, Sanding, Spray, Silk Print specifications.
12. Reliability must satisfy HVC standards.
13. Delivery packing specifications must be discussed separately.
14. All other issues must be handled with HVC designer.



Coating Specification

CODE No.	A	
Standard	D20192403178	
Color	Code	-
	Name	BLK
Printing	Color	-
Process	Casting→Cutting→Sanding→Machining/Tapping→Degrease→Anodizing	

UNIT

mm

DESIGN

CHECK

APPROVAL

PART
NAME

HEAT-SINK LED

SCALE

1 / 1

CHB . LEE

MH . PARK

MODEL
NAME

PNO-A9082R

Hanwha Vision

CODE NO.

EP07-002100A

A3

CHANGE

The following Page(s) are related to Manuals-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE(53Vdc), 0.28A (PNV-A7082RZ)
16. This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from 12Vdc, 1.06A or PoE(53Vdc), 0.28A. (PND-A7082RV/PNO-A7082R)
17. This product is intended to be supplied by isolation power.
18. If you use excessive force when installing the product, the camera may be damaged and malfunction.
If you forcibly install the product using non-compliant tools, the product may be damaged.
19. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
This may cause damage to the product.
20. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
21. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
Install the product by referring to "Installation & connection" in the user manual.
22. Installing or using the product in water can cause serious damage to the product.
23. Although a rapid change in temperature could cause frost inside the dome, there will be no problem with the video.



24. This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstroke, communication interruption.
25. The operating temperature for the PNV-A7082RZ products is -50°C to +55°C(-58°F to +131°F).
26. The operating temperature for the PND-A7082RV products is -25°C to +50°C(-13°F to +122°F).
27. The operating temperature for the PNO-A7082R products is -50°C to +55°C(-58°F to +131°F).
28. The heater turns on when the ambient temperature is below 5°C(41°F) and off when it is above 10°C(50°F).
(PNV-A7082RZ, PND-A7082RV, PNO-A7082R)

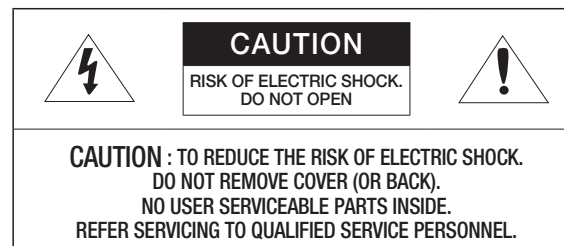
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The battery cannot be replaced.

Prohibition of battery abuse

- Do not install and use the wrong type of battery.
- Do not leave the battery in a mechanically crush or cut it because it can explode.
- Do not leave the battery in a high temperature environment.
- Do not leave the battery in a low-pressure environment.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Please use the input power with just one camera and other devices must not be connected.

The USB-C port on the product is intended for initial setup only and should not be used for any other purpose. (PND-A7082RV, PNO-A7082R)

When a new product box is opened (or during the initial use of the product), moisture might build up on the glass of the camera. The built-up moisture disappears naturally within a few hours after powered on.

Do not arbitrarily loosen or tighten the gore valve.

The ITE is to be connected only to PoE networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3at shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.
The high temperature of the product surface may cause a burn.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

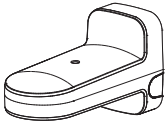
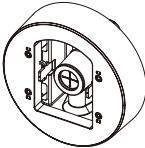
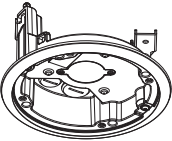
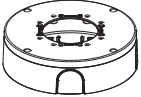
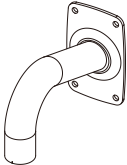
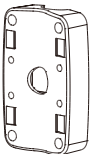
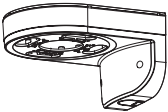
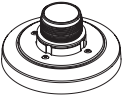
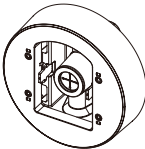
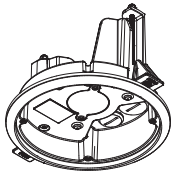
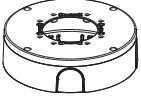
※ Please read this manual for the safety before using of goods and keep it in the safe place.

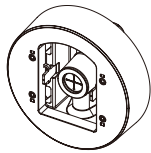
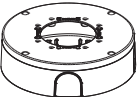
We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.

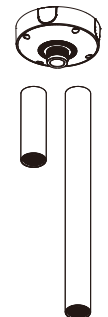
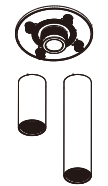
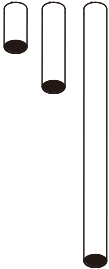
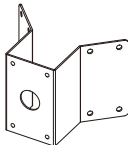
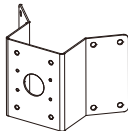
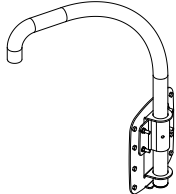
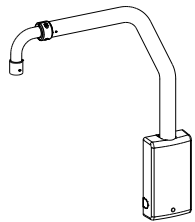
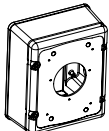
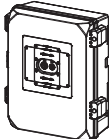
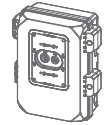
In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

OPTIONAL ACCESSORIES FOR INSTALLATION

You can purchase appropriate optional accessories available.

Model name	Wall Mount and Pole Mount	Hanging Mount	Pole Mount (Direct Assembly)	Housing	Back Box and Tilt Mount
PNV-A7082RZ/	 SBP-250WMW (Wall&Pole Mount)	 SBP-180HMMW1	 SBD-180PMW	 SHD-1370FPW	 SBV-180BW (Back Box)
	 SBP-300WMW (Wall Mount)  SBP-300PMW2 (Pole Mount) * SBP-300PMW2 required for pole installation				 SBV-180WW (Waterproof Back Box)
PND-A7082RV	 SBP-160WMW1 (Indoor Wall&Pole Mount)	 SBP-160HMMW1	 SBD-180PMW	 SHD-1372FPW	 SBV-180BW (Back Box)
					 SBV-180WW (Waterproof Back Box)  SBP-160TMW1 (Tilt Mount)

Model name	Wall Mount and Pole Mount	Hanging Mount	Pole Mount (Direct Assembly)	Housing	Back Box and Tilt Mount
PNO-A7082R	-	 SBP-160HMW1	 SBD-180PMW	-	 SBV-180BW (Back Box)  SBV-180WW (Waterproof Back Box)

Model name	Ceiling Mount		Corner Mount	Parapet Mount	Cabinet
	Assembly	Individual Parts			
PNV-A7082RZ/ PND-A7082RV	 SBP-300CMTW (Telescopic)  SBP-300CMTS (Ball Head)  SBP-300CMW1 SBP-900CMW  SBP-150CMI SBP-300CMI	 SBP-180CMB  SBP-180CMS (Ball Head)  SBP-140CMB  SBP-150CMP SBP-300CMP SBP-900CMP  SBP-C15P  SBP-C15H	 SBP-300KMW1  SBP-156KMW	 SBP-300LMW  SBP-156LMW1	 SBP-300NBW  SBP-150NBW  SBP-050NBW
PNO-A7082R	-	-	-	-	-

INSTALLATION



- The camera jack connected to the external cable is not waterproof. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

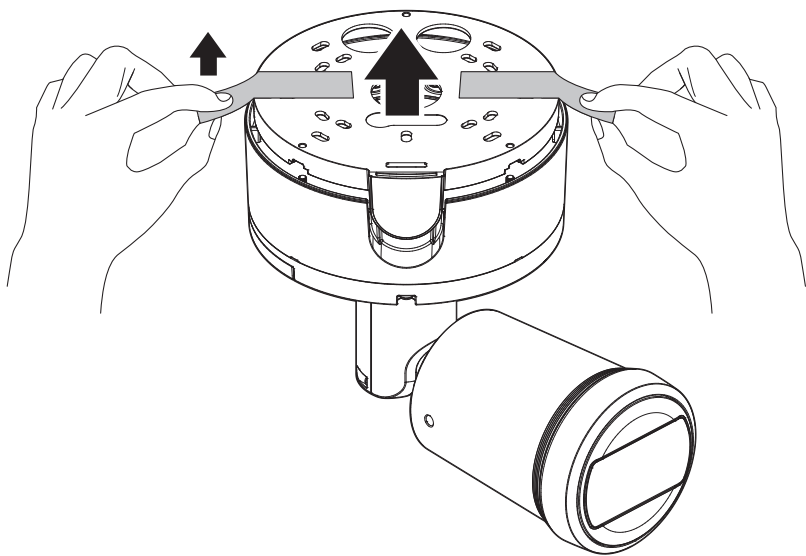
Precautions before installation

Ensure you read out the following instructions before installing the camera:

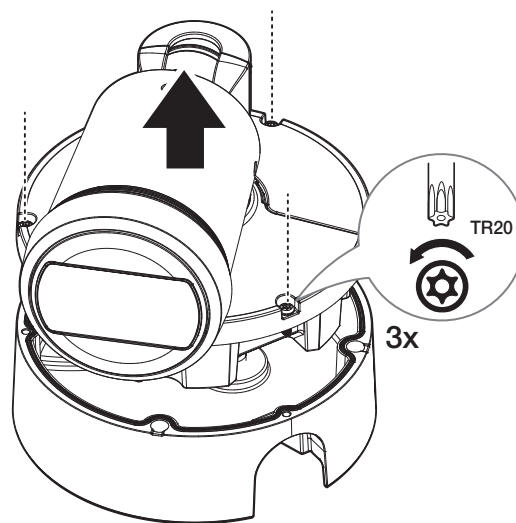
- Select an installation site that can hold at least 5 times the camera's weight.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.
- If the product is installed with excessive force, it may cause damage to the camera due to malfunction. Forcing assembly using non-compliant tools may damage the product.
- Do not use the sunshield hole for any purpose other than for connecting the sunshield.

Removal

1. Remove the fixing tape from the bottom cover and mount plate, and then remove the mount plate.

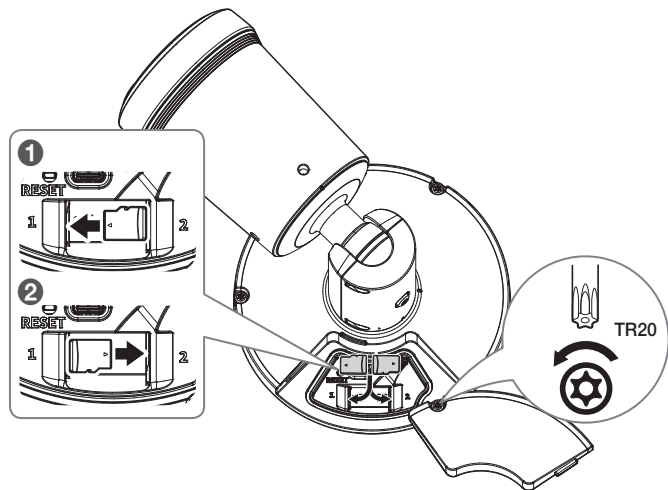


2. Remove the bottom cover by turning the bottom cover's fastening screws on the camera body counterclockwise.
 - Note that it is not necessary to loosen the screws completely.



Inserting a Micro SD card

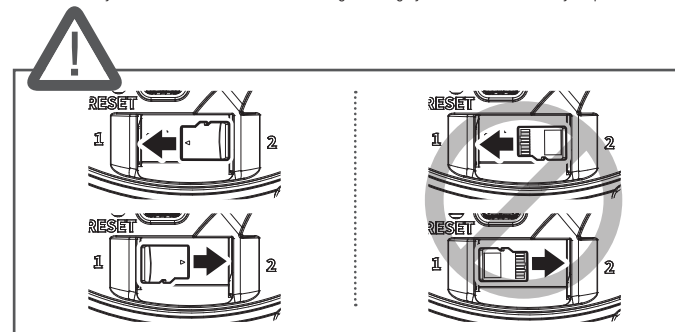
1. Remove the screw from the micro SD card slot cover with a Torx wrench or another tool, and then pull the cover aside.
2. Insert a Micro SD card in the arrow direction shown in the figure.



3. Place the micro SD card slot cover, and then tighten the screw to assemble it.



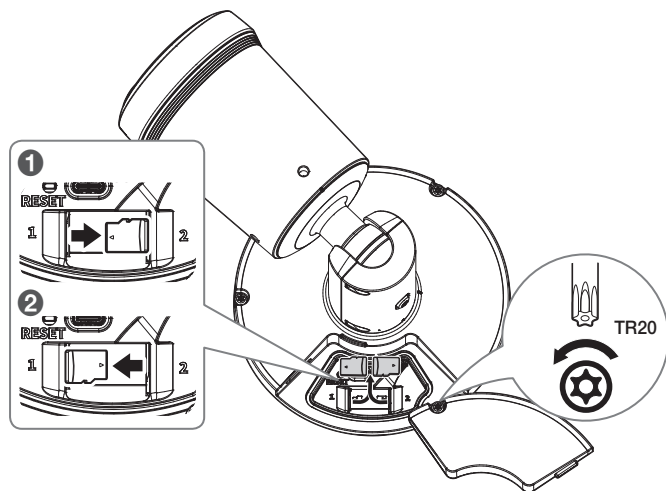
- Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.



- Before installing the camera, the Micro SD card should be inserted while the power source and the body are separated.
- Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.
- When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
- When installing/removing the Micro SD card, make sure you put the product body on a flat ground before working on it in order to prevent accidents due to loss or drop of any parts.

Removing a Micro SD card

Gently press down on the exposed end of the Micro SD card as shown in the diagram to eject the Micro SD card from the slot.

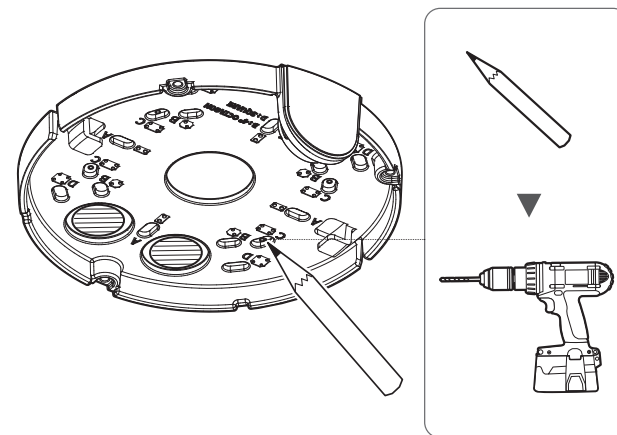


- ❗ Before removing the Micro SD card, in <Setup (⚙️)>-<Event>-<Storage>, set the device to <Off> and press the [Apply] button and turn the camera off.
- If you turn off the camera or remove the Micro SD card that contains data from the product, the data may be lost or damaged.

Installation (Mount plate)

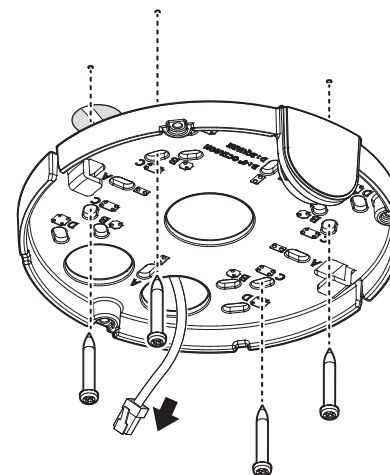
[Directly installing on wall/ceiling]

- 1-1. Place the mount plate on the desired location considering the direction to be monitored, mark the locations for the screw holes and cable holes, and then drill the holes.



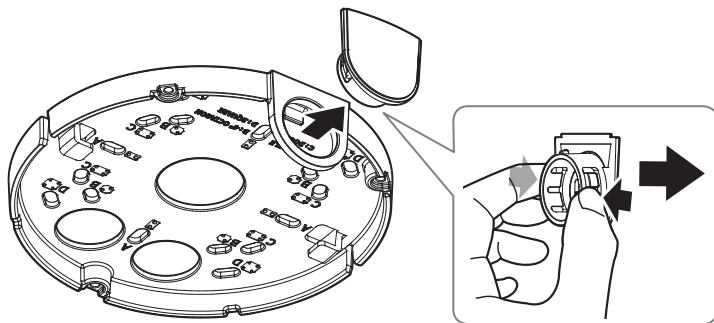
- 1-2. Fix the Mount plate using appropriate screws.

- 1-3. Pull out necessary cables among network/power/audio/alarm cables through the hole in the Mount plate.



[Installing using pipe]

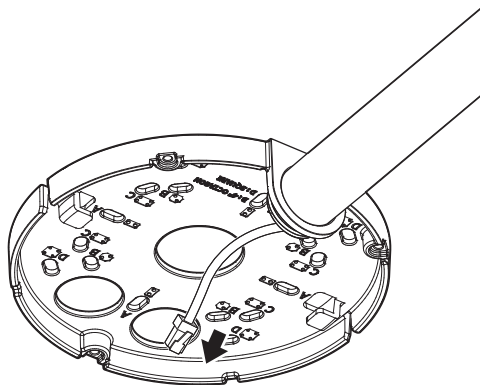
- 2-1. When installing by connecting pipes, you can use it by removing the pipe cover from the mount plate.
Separate the pipe cover of the Mount plate by pressing its sides.



2-2. Place the pipe on the Mount plate.

2-3. Fix the Mount plate using appropriate screws.

2-4. Pull out necessary cables among network/power/audio/alarm cables through the pipe.

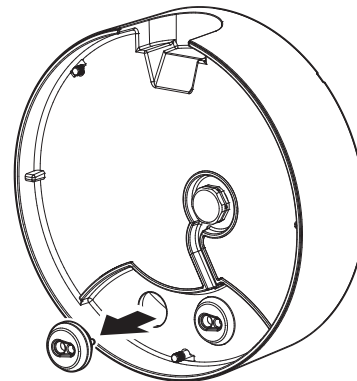


Installation (Bottom cover)

- ! ■ Use a cable bushing compliant with the network cable to be connected.
- Camera main: use a cable with the diameter of Ø5 to 6.5
 - You can only use a network cable with a diameter of Ø6.5 or less.

[Installing network/power cables]

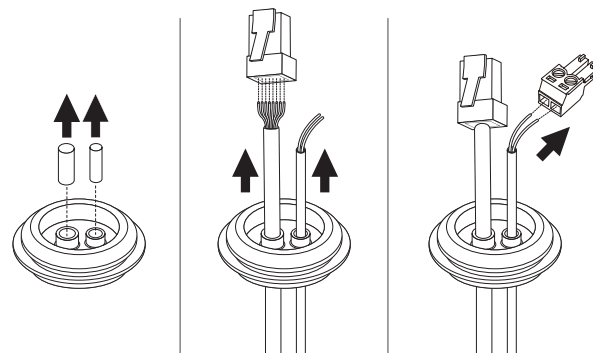
- 1-1. As shown in the figure below, remove the cable bushing from the bottom cover.



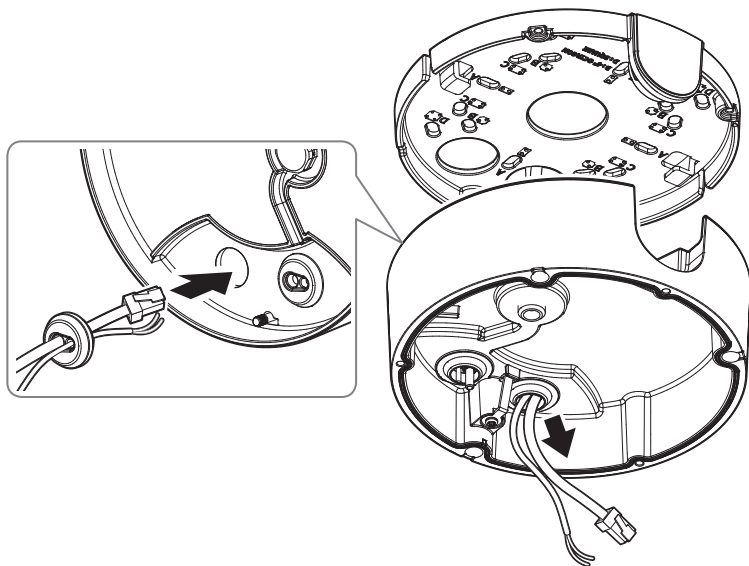
1-2. Pull off the extruded parts of the detached cable bushing to be used.

1-3. Route the network cable through the big hole of the cable bushing and connect to the network cable connector.

1-4. (When using the power) Route the power cable through the small hole of the cable bushing and connect it to the provided terminal block.

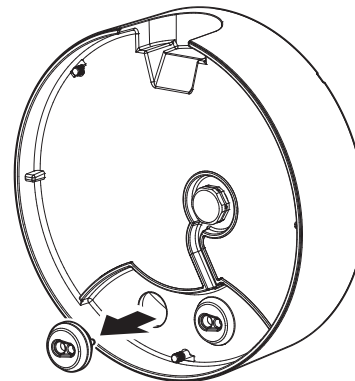


1-5. Mount the cable bushing to the Bottom cover.



[Installing the network cable] (PNO-A7082R: IP66/IP67)

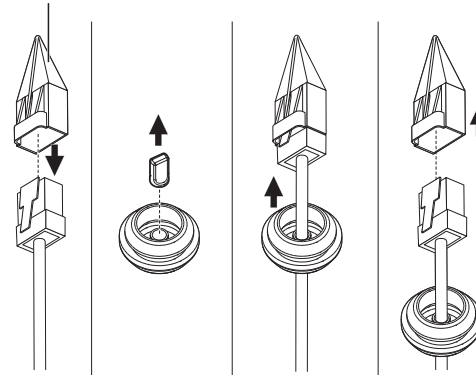
2-1. As shown in the figure below, remove the cable bushing from the bottom cover.



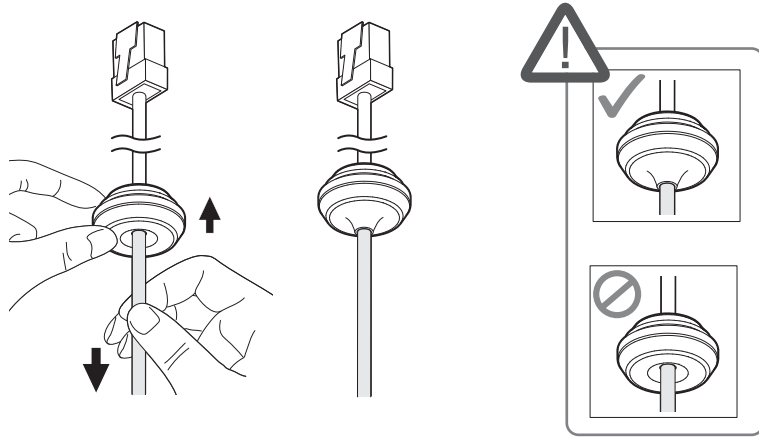
2-2. Pull off the extruded part of the 1-hole cable bushing provided.

2-3. Use the cap installer to pass through the RJ45 cable.

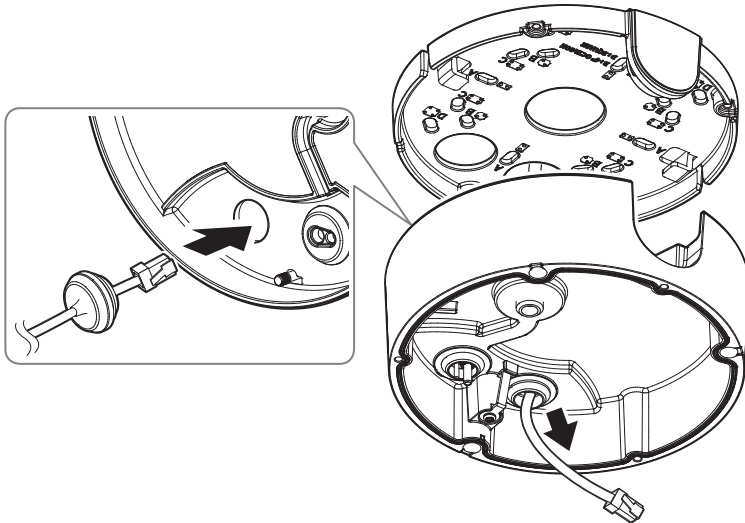
Cap Installer



2-4. For waterproof protection, pull down the cable below the cable bushing as shown in the figure below.

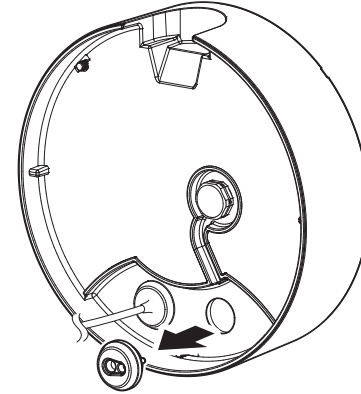


2-5. Insert the cable bushing of the network cable into the bottom cover.

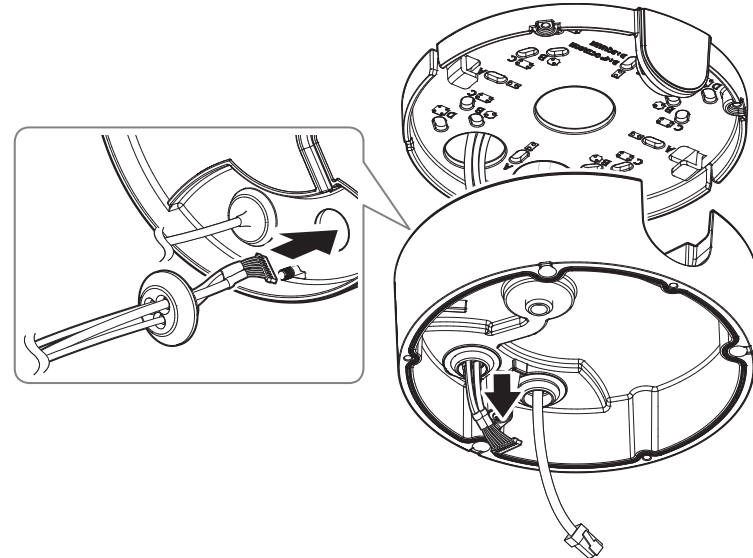


[Installing audio/alarm cables]

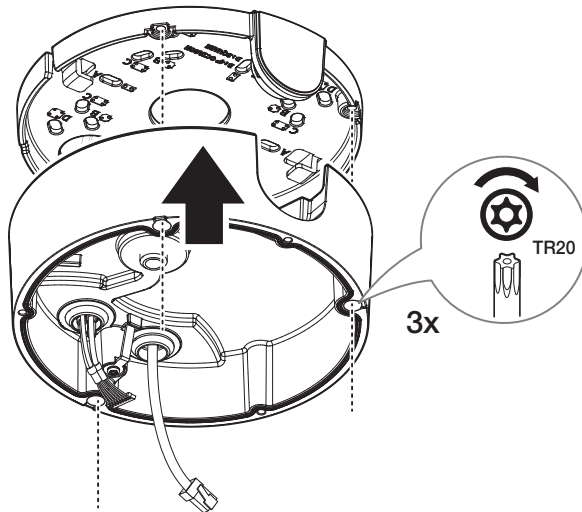
3. As shown in the figure below, remove the cable bushing from the bottom cover.



4. Mount the cable bushing of the provided audio/alarm cables to the Bottom cover.

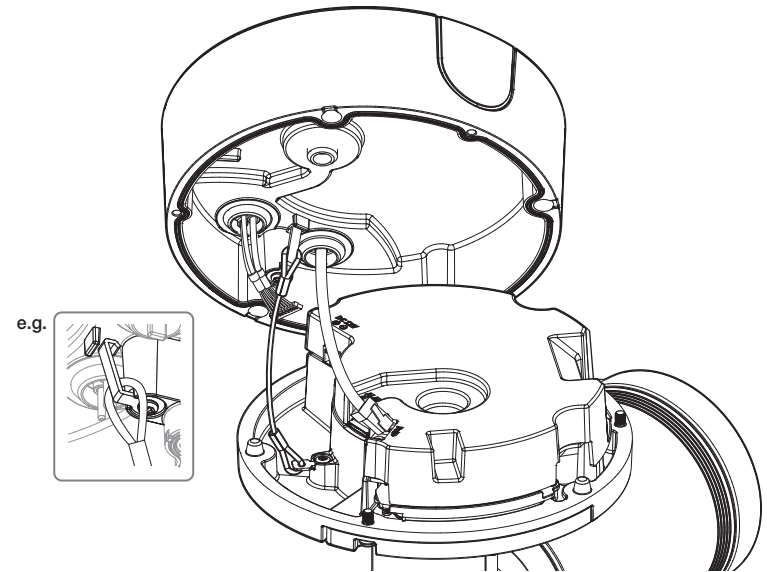


5. Join the Mount plate with the Bottom cover.

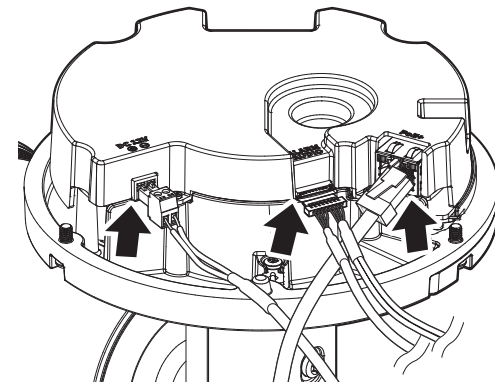


Installing the camera module

1. Hang the safety cable from the camera body up on the safety hook inside the bottom cover.

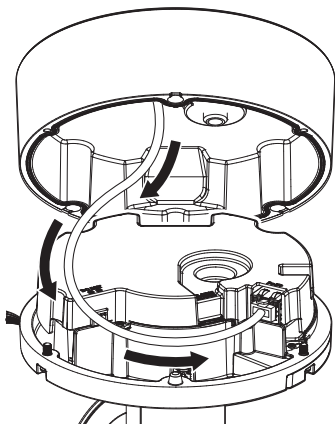


2. Connect the network/power/audio/alarm cables to the port on the camera body.





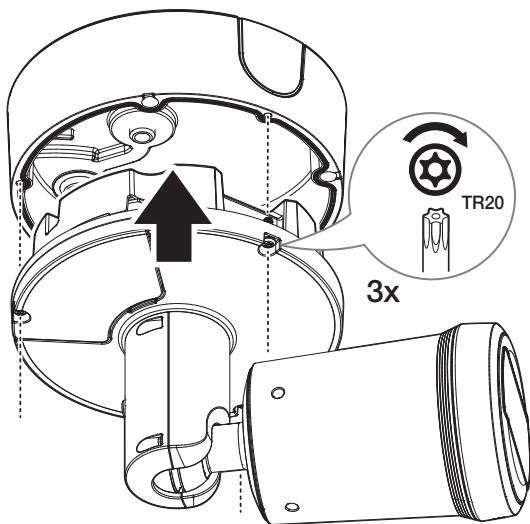
- Place the network cable in a circular form as shown in the figure below.



3. Attach the camera body to the Bottom cover.



- Make sure to firmly tighten the fastening screws so that there is no water damage issue.

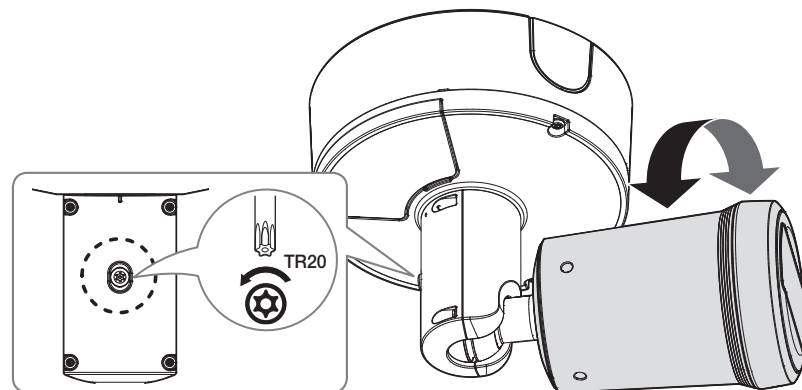


4. Adjust the camera direction using the Torx. wrench.

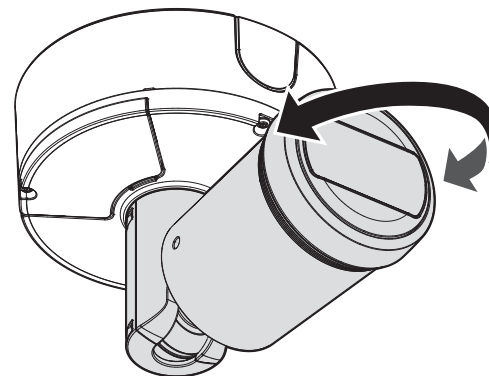
- If you tilt the lens, you may need to adjust the lens as this may block the screen.
- Connect a monitoring device to the USB type-C port and then monitor and adjust it. (page 42)



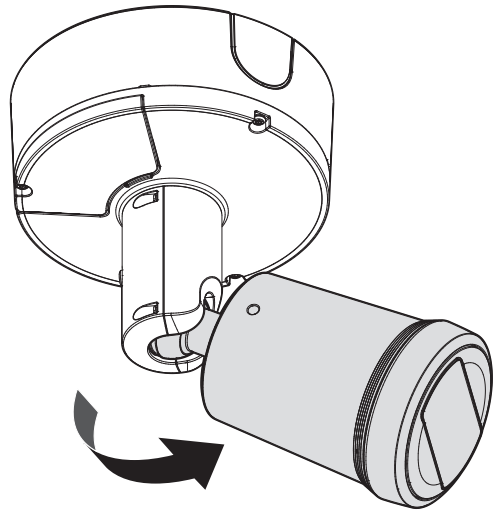
- When you adjust the camera position using a bracket, please loosen the bracket screw, adjust the camera, and tighten it. If you attempt to adjust it forcibly while the screw is tight, it may result in a scratch or other problems.



Lens rotation

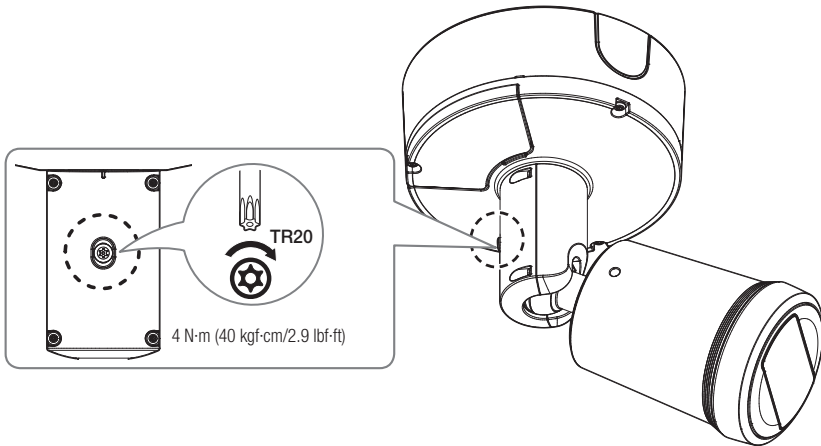


Pan

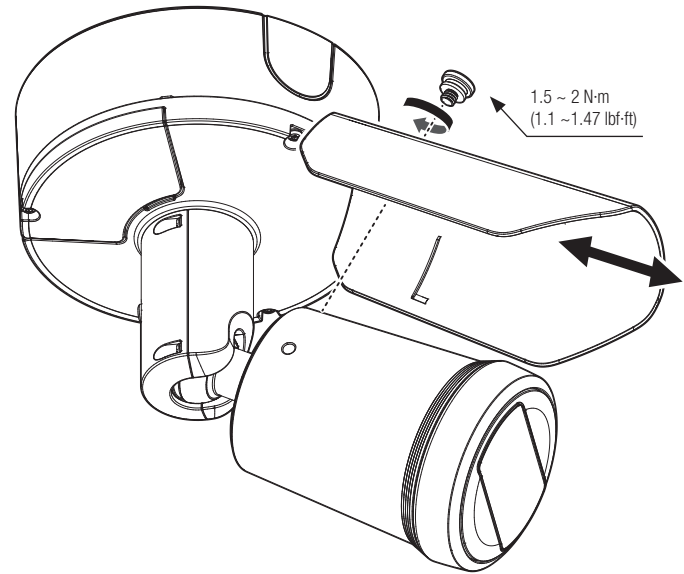


Tilt

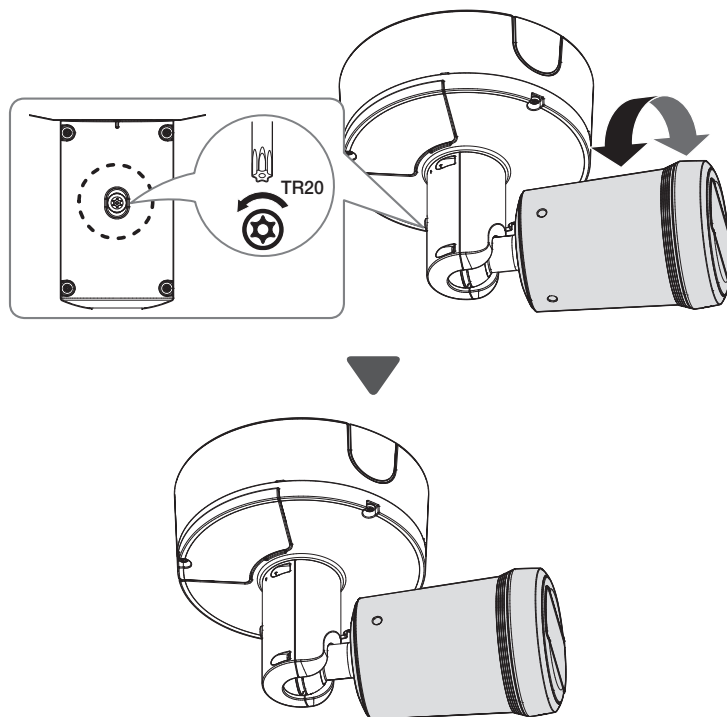
5. When adjusting the lens rotation is complete, re-fasten the lens rotation adjustment screws to secure the angle.



6. Use the sunshield mounting screws and tooth washers to join the sunshield to the camera body.



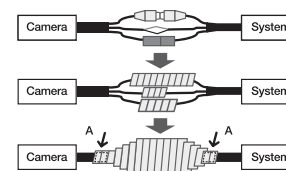
- When installing the camera on the ceiling, rotate the lens rotation 180° before use.



Waterproofing of cable connections

When installing the camera, please waterproof it with waterproof butyl rubber tape (can be purchased in stores) so that water does not leak from the gap of the cable connected to the outside.

1. Connect the power, I/O, and network cables.
2. Wrap the black cable jacket (Area A) and the cable connection area with waterproof (butyl rubber) tape so that more than half of the butyl rubber tape is overlapped.



- If the cable jacket is not waterproofed properly, then it can directly cause leakage. Make sure to protect the cable with a dense layer of taping.
- Waterproof butyl tape is made of butyl rubber that can be stretched to twice its normal length.

The following Page(s) are related to Miscellaneous-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



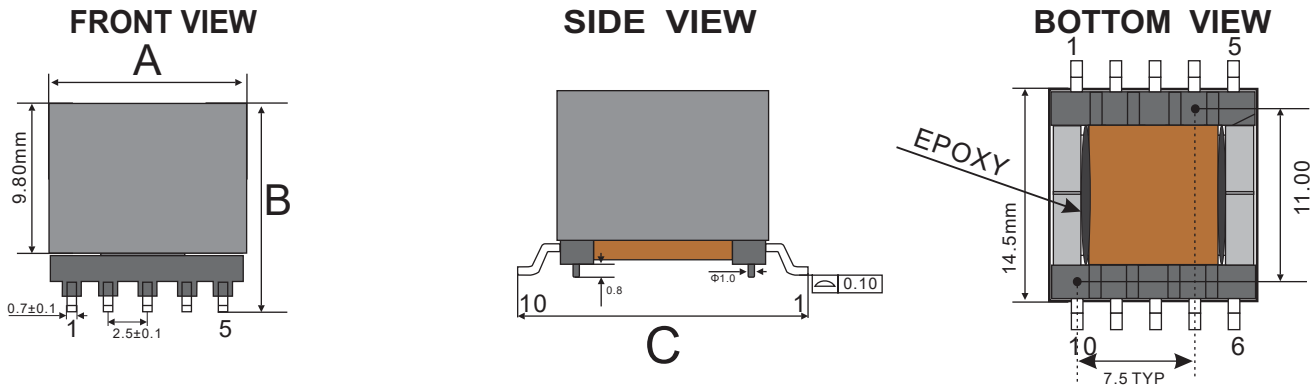
承认书

SPECIFICATION FOR APPROVAL

CUSTOMER	
MODEL NO.	EP23-001075A
PART NAME	POWER TRANSFORMER
PART TYPE	PDT25125SR
REV	X7
SIGNATURE	制图: 施壘某 2020-01-07 Drawn by Lei Wan 审核: 施壘某 2020-01-07 Checked by GX Song 批准: 施壘某 2020-01-07 Approved by Jiang Wang
CUSTOMER APPROVAL	廠志恆: SIGNET 嘯ò: SIGNATURE

拐 提 攪 施 壘 某 棐 槐 壘 毒 泐 涓 滌 潑
SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD
地 址： 深圳市宝安区石岩街道应人石工业区伟泰路 1 栋（P. C: 518108）
ADD: No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen,
TEL: +86-755-29810619 29810976 FAX: +86-755-29810159
Http://www.group-tek.com E-mail:sale1@group-tek.com

2. Mechanical Dimensions:



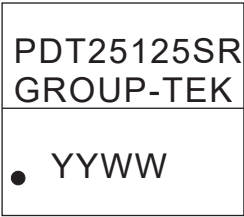
Note:

- 1.Wrap 2Ts of 7mm kapton tape around the finished part.
- 2.Fixed the cores with glue,and fixed the case with glue.

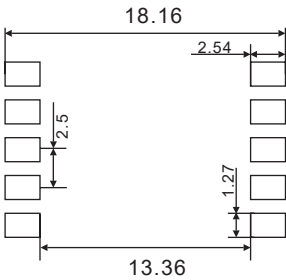
Unit: mm

A MAX	B MAX	C MAX
15.0	14.8	17.8

Laser Marking information



Suggested PCB Paad Layout

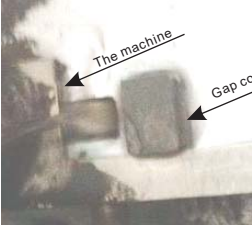


3. Electrical Characteristics :

Specifications: at 25°C.		Operating Temperature -40 to +105°C*	
NO.	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	(1-3) @100KHz, 1.0V	41.0uH ±10%.
2	Leakage Inductance	(1-3) @100KHz, 1.0V with shorted other pins.	0.67uH Max.
3	DCR	(1-3) @ 25°C	62.0mΩ Max.
4		(9-6) @ 25°C	20.0mΩ Max..
5		(10-7) @ 25°C	23.0mΩ Max.
6		(4-5) @ 25°C	120.0mΩ Max.
7	HI-POT	PRI TO SEC	2250Vac 5mA 3Sec.
8	TURN RATIO	(1-3):(9-6):(10-7)	2.67:1.0:1.0±2%.
9	TURN RATIO	(1-3):(4-5)	2.67:1.0±2%.
10	INSULATION RESISTANCE	PRI--SEC DC500V	100MΩ Min.
11		PRI--CORE DC500V	100MΩ Min.
12		SEC--CORE DC500V	100MΩ Min.

*Remark:Product surface temperature:-40 to +125°C,at 25°C.

4.Overhauling List.

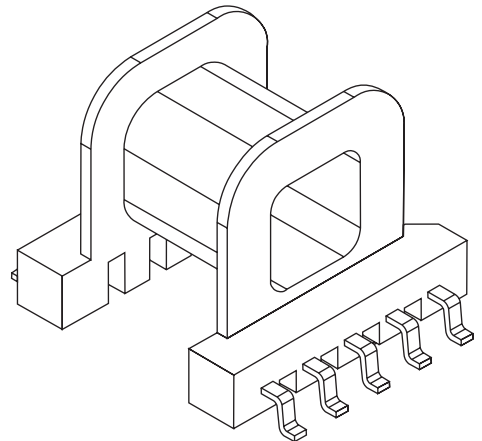
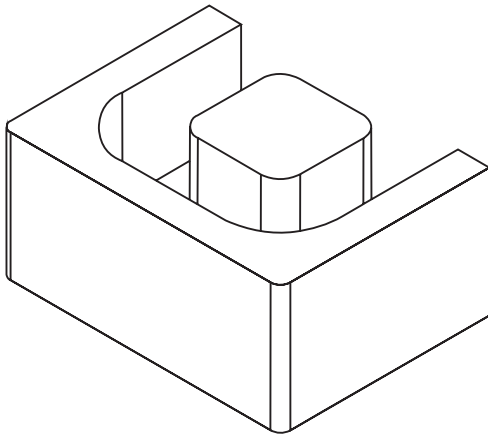
NO.	ITEM	SPECIFICATION
1	Tape turns	2T
2	Winding turns	P1-1:16T S1-1:6T P1-2:16T S1-2:6T P2:6T
3	Pins order/Pin connection .	1T
4	Marking Information	PDT25125SR GROUP-TEK ● DATE CODE
5	Gap the center leg	  
6	Solder Temperature	420±20°C 

5.Winding Information:

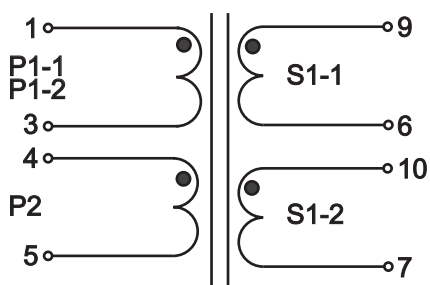
WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
P1-1	1--3	4*0.21mm 2UEW	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-1	9--6	4*0.27mm 2UEW (Red)	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P1-2	1--3	2*0.21mm 2UEW (Natural)	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-2	10--7	4*0.27mm 2UEW	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P2	4--5	3*0.17mm 2UEW	6	2T w8.0mm (kapton tape)	N/A	N/A	1

NOTE :

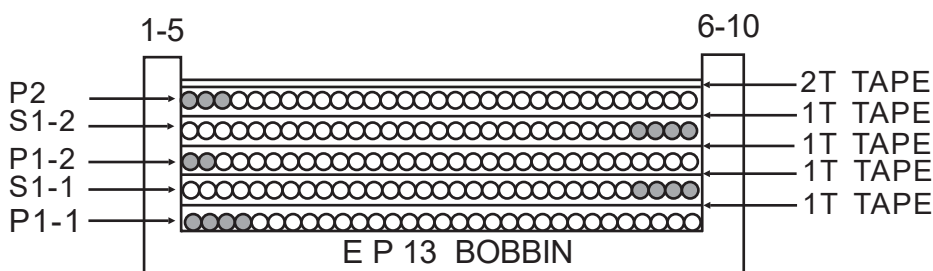
1. -Place the bobbin pin 1 left side of operator.



6.Schematic:



7.Winding construction



● :Start terminal

8.Material List:

NO.	ITEM.	MATERIALS	SUPPLIERS/MANUFACTURERS	UL FILE NO.
1	BOBBIN	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTICS CO LTD.	QMFZ2.E59481
2	CORE	TP2A	TTS Technology Co.,Ltd.	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO: 2UEW THERMAL RATING:180°C	ZHUHAI SUNTEK WIRE CO LTD	OBMW2.E234867
4	TAPE	ADHESIVE POLYESTER TAPE TYPE NO.:CT*(c)(g) THERMAL RATING:130°C yellow tape: for inner coils	JingJiang yahua pressure sensitive glue Co.,Ltd	E165111
5	SOLDER	SN/CU: 99.3/0.7	Gao Xin stannum industry Co.,Ltd	N/A
6	Glue	E-500(xx)	Dong Guan city eatto electronic material Co.,Ltd	E218090
7	CASE	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTICS CO LTD.	QMFZ2.E59481

9.PACKING INFORMATION:

DESCRIPTION	QTY
PIECES PER REEL	150
PIECES PER POCKET	1
PIECES PER BOX	450
REEL PER BOX	3
GROSS WEIGHT PER BOX(KG)	TBD
NET WEIGHT PER BOX(KG)	TBD

The following Page(s) are related to Miscellaneous-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



SPECIFICATION FOR APPROVAL

客户名称 CUSTOMER			
客户料号 MODEL NO			
产品名称 PART NAME	COMMON MODE CHOKE		
产品型号 PART TYPE	PCM1206-752S		
版本 REV	X0		
签名 SIGNATURE	制作: PREPARED BY 联泰兴 2024-11-04 JLYe	审核: CHECKED BY 联泰兴 2024-11-04 weifeng. Luo	批准 APPROVED BY 联泰兴 2024-11-04 Jiang. Wang
客户承认 CUSTOMER APPROVAL	承认印: SIGNET	签名: SIGNATURE	

深圳市联泰兴电子科技有限公司

SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD

地址：深圳市宝安区石岩街道应人石工业区伟泰路 1 栋 2-5 楼

ADD: Floor 2-5, No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen, China

TEL: +86-755-29810619 29810976 FAX: +86-755-29810159

Http://www.group-tek.com

E-mail:sale1@group-tek.com

二. ELECTRICAL CHARACTERISTICS:

PART NUMBER	INDUCTANCE @10KHz/0.3V (1-2)=(4-3) mH+50%-30%	Turn Ratio@ (1-2):(4-3)	Rated Current IRMSΔT≤40°C Typ	RDC(Ω) (1-4)=(2-3)Max	HI-POT pri-sec V 1mA/ 2Sec
PCM1206-752S	7.5mH	1:1±2%	1.0A	250mΩ	1500V/AC

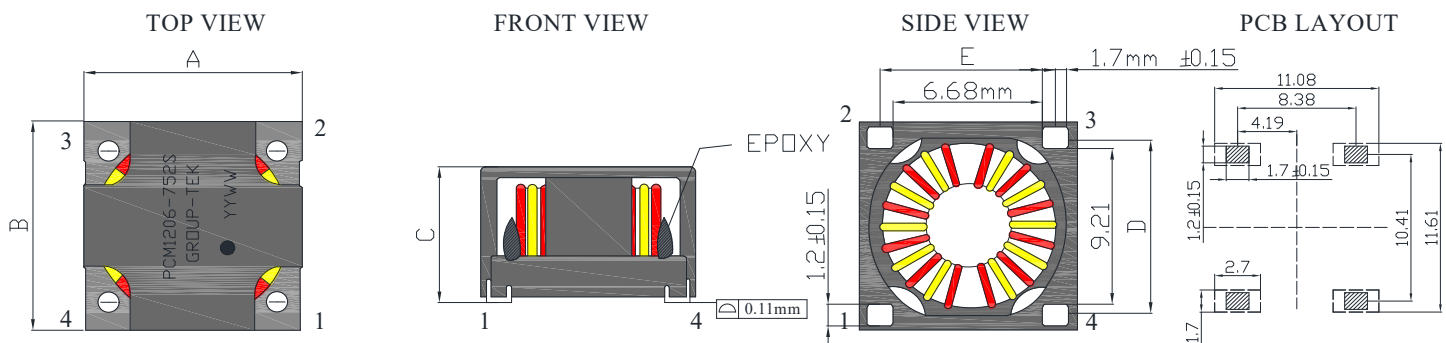
Operating temperature -40℃~+125℃

CH3302 or HP4284....., RDC test equipments CH502.....

*. Inductance & Q value test condition Frequency 10KHz and 0.3Vrms at 25℃;

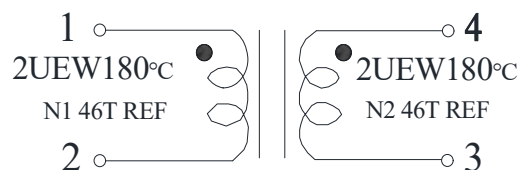
*. Storage temperature -25℃~+125℃, Humidity 20% to 70%RH.

三. EXTERNAL DIMENSIONS: UNIT: mm



Item	A	B	C	D	E
mm	12.6 ± 0.5	12.8 ± 0.5	6.0 ± 0.5	10.41 ± 0.5	8.38 ± 0.5

四: CIRCUIT



五. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER OF THE MATERIAL	UL CARD
1	CORE	Mn-Zn T9*5*3 10K	HUIZHOU KELI MAGNETICS CO.,LTD	N/A
2	CASE	21-0911HN	DONGGUAN FENGQIANG ELECTRONICS CO.,LTD	N/A
3	WIRE	2UEW180°C, 0.2mm R, N	.Shing Shun Magnet wire (hui zhou)co,Ltd	E255839
4	SOLDER	SN99.3%/CU0.7%	Gaoxin stannum industry co,ltd	N/A
5	Varnish	E-57	Shen zhen Eastlight chemi cals., Ltd.	N/A

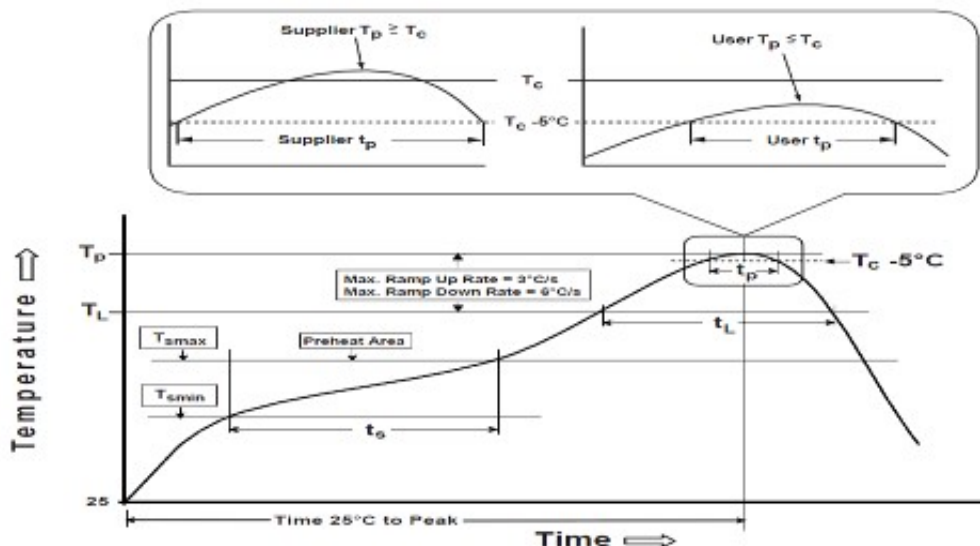
Reflow curve diagram

1.1 Available for all the through hole parts.

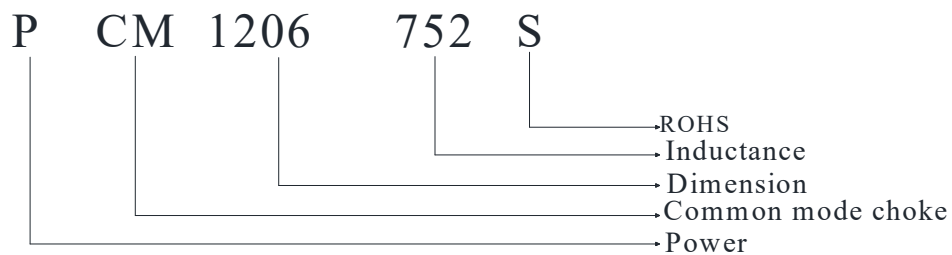
1.2 Soldering Method: IR Reflow.

1.3 Solder: Sn99/Ag0.3/Cu0.7.

1.4 The recommended Lead Free IR Reflow Soldering Curve:



Item	Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
1	Preheat/Soak Temperature Min (T _{min}) Temperature Max (T _{max}) Time (ts) from (T _{min} to T _{max})	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-120 seconds
2	Ramp-up rate (TL to Tp)	3 °C/second max.	3 °C/second max.
3	Liquidous temperature (TL) Time (tL) maintained above TL	183 °C 60-150 seconds	217 °C 60-150 seconds
4	Peak package body temperature (Tp)	For users Tp must not exceed the Classification temp in Table 4-1(IPC/JEDEC J-STD-020D.1). For suppliers Tp must equal or exceed the Classification temp in Table 4-1(IPC/JEDEC J-STD-020D.1).	For users Tp must not exceed the Classification temp in Table 4-2(IPC/JEDEC J-STD-020D.1).260°C. For suppliers Tp must equal or exceed the Classification temp in Table 4-2(IPC/JEDEC J-STD-020D.1).
5	Time (tp)* within 5 °C of the specified classification temperature (Tc), see Figure 5-1(IPC/JEDEC J-STD-020D.1).	20* seconds	30* seconds
6	Ramp-down rate (Tp to TL)	6 °C/second max.	6 °C/second max.
7	Time 25 °C to peak temperature	6 minutes max.	8 minutes max.





NETWORK CAMERA,PNO-A7082R

DC 12V $\overline{\text{---}}$ 1.06A / PoE(53V $\overline{\text{---}}$) 0.28A

M/C: PNO-A7082R/KEX Fac.ID:D



2025.05 S/N: Serial No.

MAC ADDRESS: XX-XX-XX-XX-XX-XX

CAN ICES-3(A)/NMB-3(A)

HANWHA VISION CO.,LTD.

MADE IN KOREA

Rainproof/ Étanche
IP66 and IP67





